

2000. Those deposited seeds have been assigned ATCC Accession No. PTA-2192. The deposit was made in accordance with the terms and provisions of the Budapest Treaty relating to deposit of microorganisms and was made for a term of at least thirty (30) years and at least five (05) years after the most recent request for the furnishing of a sample of the deposit is received by the depository, or for the effective term of the patent, whichever is longer, and will be replaced if it becomes non-viable during that period.--

In the Claims:

Please amend claims 1, 4, 7, 8, 10, 13, 18, 19 and 29 as follows:

1. (Amended) Inbred corn seed of the corn plant LIZL5, a sample of said seed having been deposited under ATCC Accession No. PTA-2192.

4. (Amended) An inbred corn plant produced by growing the seed of the inbred corn plant LIZL5, a sample of said seed having been deposited under ATCC Accession No. PTA-2192.

7. (Amended) An essentially homogeneous population of corn plants produced by growing the seed of the inbred corn plant LIZL5, a sample of said seed having been deposited under ATCC Accession No. PTA-2192.

8. (Amended) A corn plant capable of expressing all the physiological and morphological characteristics of the inbred corn plant LIZL5, a sample of the seed of said inbred corn plant LIZL5 having been deposited under ATCC Accession No. PTA-2192.

10. (Amended) A tissue culture of regenerable cells of inbred corn plant LIZL5, wherein the tissue regenerates plants capable of expressing all the physiological and morphological

A2 characteristics of the inbred corn plant LIZL5, a sample of the seed of said inbred corn plant LIZL5 having been deposited under ATCC Accession No. PTA-2192.

AB 13. (Amended) A corn plant regenerated from the tissue culture of claim 10, wherein said corn plant is capable of expressing all of the physiological and morphological characteristics of the inbred corn plant designated LIZL5, a sample of the seed of said inbred corn plant designated LIZL5 having been deposited under ATCC Accession No. PTA-2192.

A9 18. (Amended) A process of producing corn seed, comprising crossing a first parent corn plant with a second parent corn plant, wherein said first or second corn plant is the inbred corn plant LIZL5, a sample of the seed of said inbred corn plant LIZL5 having been deposited under ATCC Accession No. PTA-2192, wherein seed is allowed to form.

Sub B3 19. (Amended) The process of claim 18, further defined as a process of producing hybrid corn seed, comprising crossing a first inbred corn plant with a second, distinct inbred corn plant, wherein said first or second inbred corn plant is the inbred corn plant LIZL5, a sample of the seed of said inbred corn plant LIZL5 having been deposited under ATCC Accession No. PTA-2192.

AW 29. (Amended) A method of preparing a transgenic maize cell comprising:

- a) providing cells of inbred corn plant LIZL5, a sample of the seed of the inbred LIZL5 having been deposited under ATCC Accession No. PTA-2192;
- b) contacting said cells with a pre-selected DNA; and
- c) identifying at least a first transgenic cell of inbred corn plant LIZL5 which has been transformed with said pre-selected DNA.

II. RESPONSE TO OFFICE ACTION

A. Status of the Specification

The specification has been amended to correct deficiencies relating to information for the deposit of seed for the claimed inbred. A marked copy of the amendments is provided in **Appendix A**.

B. Status of the Claims

Claims 1-39 were filed with the original application. Claims 1, 4, 7, 8, 10, 13, 18, 19 and 29 have been amended herein. A marked copy of the amendments is provided in **Appendix A**. A clean copy of the pending claims following entry of the amendments is provided in **Appendix B**. In view of the amendments, the objections cited in the Action are now moot. Claims 1-39 are now pending and presented for reconsideration.

C. Rejection of Claims Under 35 U.S.C. §112, First and Second Paragraphs

The Action rejects claims 1-39 under 35 U.S.C. §112, first and second paragraphs, as allegedly not describing the invention in such full, clear, concise, and exact terms as to enable any person skilled in the art to make and use the same, and/or for failing to particularly point out and distinctly claim the invention which Applicant regard as the invention. In particular, the Action has asserted that claims 1-39 are incomplete and therefore indefinite in view of the term "and ATCC accession No. - - - -" as set forth in claims 1, 4, 7, 8, 10, 13, 18, 19 and 29.

In response, Applicant notes that a deposit of 2,500 seeds of the inbred LIZL5 was made with the ATCC. The deposit was made in accordance with the terms and provisions of 37 C.F.R.

§1.808 relating to deposits of microorganisms. A declaration certifying that the deposit meets the criteria set forth in 37 C.F.R. §1.801-1.809 is attached hereto as **Exhibit 1**.

The rejected claims have each been amended, either directly or by way of dependency upon an amended claim, to recite the accession number for those seeds of the inbred corn plant LIZL5 which have been deposited with the ATCC. The specification has also been amended to include the accession number of the deposit and the date of deposit.

In light of the foregoing, Applicant respectfully requests that the rejection of claims 1-39 under 35 U.S.C. §112, first and second paragraphs, be withdrawn.

D. Rejection of Claims Under 35 U.S.C. §112, Second Paragraph

The Action next rejects claims 1-39 under 35 U.S.C. §112, second paragraph for allegedly being indefinite for failing to particularly point out the subject matter which Applicant regards as the invention. In particular, the Action asserts that the designation LIZL5 is vague and indefinite.

In response, Applicant first notes that the second paragraph of 35 U.S.C. §112 merely requires that it be clear to those skilled in the art what Applicant intends to claim. What is dispositive is whether one of ordinary skill in the art would understand what is claimed when the claims are read in light of the specification.

The inbred LIZL5 is fully described in the specification where it is given a definite meaning. The physiological and morphological characteristics of LIZL5 are given in Table 3 at page 25 of the specification. Additionally, the exemplary SSR and isozyme marker profiles for inbred LIZL5 are given in Tables 6 and 7 on pages 58-61 of the specification. As the exemplary SSR marker and isozyme profiles are set forth in the specification, their recitation in the claims is neither vague nor indefinite. Furthermore, Applicant has deposited seed of the inbred LIZL5 with

the ATCC. Therefore, the descriptions of traits, genetic profiles provided within the specification, and the deposit of seed would allow one of skill in the art to easily determine the metes and bounds of the inbred corn plant with the designation LIZL5.

In light of the foregoing, Applicant hereby respectfully requests that the rejection of claims 1-39 under 35 U.S.C. §112, second paragraph, be withdrawn.

E. Rejection of Claims Under 35 U.S.C. §112, First Paragraph

The Action has rejected claims 1-39 as being unpatentable under 35 U.S.C. §112, first paragraph, for allegedly containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to make and/or use the invention.

(i) The Action rejects claims 1-39 with regard to the availability of the novel seed of inbred LIZL5. In response, Applicant notes that a deposit of 2,500 seeds of the inbred LIZL5 was made with the ATCC. The deposit was made in accordance with the terms and provisions of 37 C.F.R. §1.808 relating to deposits of microorganisms. The deposit was made for a term of at least thirty years or at least five years after the most recent request for furnishing of a sample of the deposit is received by the depository or for the effective life of the patent, whichever is longer. A declaration certifying that the deposit meets the criteria set forth in 37 C.F.R. §1.801-1.809 is attached hereto as Exhibit 1. Further, the specification and claims have been amended by the instant paper to recite the ATCC accession number for the deposited seeds of inbred LIZL5, and the specification also has been amended to include the date of the deposit.

In light of the foregoing, Applicant respectfully requests that the rejection of claims 1-39 under 35 U.S.C. §112, first paragraph, be withdrawn.

(ii) The Action rejects claims 8, 9, 10-13 and 14-17 as allegedly containing subject matter which was not described in the specification in such a way as to enable one of skill in the art to make and/or use the claimed invention. In particular, the Action alleges that the claimed invention is broader than that which is enabled by the deposit of seed for LIZL5.

Applicant respectfully traverses the rejection on the basis that the specification is enabling for one of skill in the art to use the invention with seed other than that which is identical to the deposited seed of the inbred LIZL5. The specification describes the physiological and morphological traits of the claimed inbred in Table 3 at page 25 of the specification. Additionally, the exemplary SSR markers for inbred LIZL5 are provided in Table 6 at page 58 of the specification, and the isozyme profile is given in Table 7 at page 60 of the specification. This information in combination with the present disclosure allows one of skill in the art to make and use not only seeds and plants derived from the deposited seed but also seeds and plants with trivial modifications such as single locus conversions. The claims do cover both of these definitions as set forth in the Action.

The claims cover seeds, plants, and hybrids made by the use of LIZL5 seed such as that deposited with the ATCC as long as the inbred seeds and plants have all of the physiological and morphological characteristics of LIZL5. The claims also cover seeds, plants, and hybrids derived from said plants and seeds which have modifications but otherwise retain essentially all of the physiological and morphological characteristics of LIZL5. As an example of a plant with such modifications, the present disclosure provides guidance for the construction of single locus converted plants in which a corn plant is developed having essentially all of the physiological and morphological characteristics of LIZL5 in addition to a single locus transferred into the corn plant

using backcrossing techniques. This is outlined on page 27 of the specification, beginning on line 19, where it is stated:

“The term single locus converted plant as used herein refers to those corn plants which are developed by a plant breeding technique called backcrossing wherein essentially all of the desired morphological and physiological characteristics of an inbred are recovered in addition to the single locus transferred into the inbred *via* the backcrossing technique.”

The specification, therefore, teaches one of skill in the art to make and use LIZL5 plants which have such trivial modifications as a single locus conversion, yet otherwise retain essentially all of the morphological and physiological characteristics of inbred maize plant LIZL5. Provided on pages 28-31 of the specification are numerous examples of single locus traits which one may wish to introduce into an LIZL5 plant. The specification also provides disclosure on backcrossing techniques and selection methods for introducing a single locus conversion. In addition to the physiological and morphological traits for LIZL5 provided in the specification, genotype information is also provided in the form of SSR data to enable a breeder to evaluate modifications at the DNA level.

It would, therefore, be well within the capabilities of the skilled artisan, in light of the present disclosure, to identify an inbred with all of the physiological and morphological characteristics of LIZL5, including identification of SSR and isozyme profiles. Additionally, one of skill in the art would be able to modify the inbred LIZL5 to include trivial modifications, such as single locus conversions, while retaining essentially all of the physiological and morphological characteristics of the inbred LIZL5. While this would necessitate some experimentation, it cannot be said to constitute undue experimentation. Applicant cites the Board's decision in *In re Wands*, 8 U.S.P.Q. 2d 1401, in particular, that “enablement is not precluded by the necessity for some experimentation such as routine screening.” Breeding and screening protocols are well defined in

the field of corn breeding and one of skill in the art would expect to conduct such testing in order to produce an inbred with the desired characteristics. The essential physiological and morphological characteristics of inbred corn plant LIZL5 are clearly defined in the specification, allowing one of skill in the art to make and use the invention as required under 35 U.S.C. §112, first paragraph.

In view of the evidence presented here, Applicant respectfully requests that the rejection of claims 8, 9, 10-13 and 14-17 under 35 U.S.C. §112, first paragraph, be withdrawn.

(iii) The Action next rejects claims 10-13 and 16, taking the position that the disclosure is enabling for those claims limited to the regeneration of an inbred corn plant with all of the physiological and morphological characteristics of corn plant LIZL5.

In response, Applicant submits that in light of the deposit of LIZL5 seed, the instant disclosure fully enables one of skill in the art to produce a tissue culture of regenerable cells of inbred corn plant LIZL5. Further, it is noted by Applicant that claim 10 recites a tissue culture which regenerates "plants capable of expressing all the physiological and morphological characteristics of the inbred corn plant LIZL5." Claim 11 depends from claim 10 and claim 12 depends from claim 11, hence both claims incorporate the former claim limitations. Claim 13 is directed to a corn plant regenerated from the tissue culture of claim 10, "wherein said corn plant is capable of expressing all of the physiological and morphological characteristics of the inbred corn plant designated LIZL5..." Claims 10 and 13 include the ATCC accession number for a deposit of inbred LIZL5 seed. Claim 16 refers to claim 14, which depends upon claim 8, a claim ALSO including the ATCC accession number for a deposit of seed of inbred corn plant LIZL5. It, therefore, appears that all of the Action's requirements have been met.

In light of the evidence presented, Applicant respectfully requests that the rejection of claims 10-13 and 16 under 35 U.S.C. §112, first paragraph, be withdrawn.

F. Conclusion

This is submitted to be a complete response to the referenced Office Action. In conclusion, Applicant submits that, in light of the foregoing remarks, the present case is in condition for allowance and such favorable action is respectfully requested.

The Examiner is invited to contact the undersigned at (512)536-3085 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,



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Date: January 2, 2002